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ABSTRACT

The central research question of this study is whether first-time scores for repeat limited-English-proficient (LEP) test-takers of Basic Standards Tests (BSTs), also known as "graduation exams," predict a passing score on the test the second time around. Three points are cautiously asserted: (1) 20% or fewer of LEP students who retook the BSTs passed, compared to 35% of all students passing the mathematics test and 52% of all students passing the reading test on the second attempt; (2) LEP students who scored below 64-68% on the reading test and below 66-69% on the mathematics test in 1997 had less than a 50% chance of passing the test in 1998; and (3) there was a small number of students who had very low scores on the first try in 1997, scoring 25% or fewer correct answers on the reading and math sections, who passed the BSTs on the second try in 1998. Although it is beyond the scope of this study, the apparently successful remedial instructional supports received by these students should be examined in greater depth. (Contains 10 tables, 4 figures, and 9 references.) (KFT)

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STATE ASSESSMENT SERIES
Minnesota Report 28

ED 418 603

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Participation and Performance of Limited English Proficient Students During Second Attempts on a Graduation Exam

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STATE ASSESSMENT SERIES
Minnesota Report 28

Participation and Performance of Limited English Proficient Students During Second Attempts on a Graduation Exam

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June 2000

The Minnesota Assessment Project is a four-year, federally funded effort awarded to the Minnesota Department of Children, Families and Learning from the U.S. Department of Education, Office of Educational Research and Improvement. The project's goal is to promote and evaluate the participation of students with limited English proficiency and students with disabilities in Minnesota's Graduation Standards. Specifically, the project will examine ways in which students with limited English and students with disabilities can participate in the Basic Standards Exams of reading, mathematics and written composition and in the performance-based assessments of the high standards in the Profile of Learning.

This project is supported, in part, by a grant to the Minnesota Department of Children, Families and Learning from the U.S. Department of Education, Office of Educational Research and Improvement (Grant #R279A50011). Opinions expressed herein do not necessarily reflect those of the U.S. Department of Education or Offices within it.

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Overview

Over the past four years, the state of Minnesota has introduced a standards-based system of accountability to reform Minnesota education statewide. Beginning in 1996, 8th graders have been required to pass minimum competency tests in order to receive a high school diploma. These Basic Standards Tests in reading and mathematics, with the recent addition of a writing test, are administered to all students, including those students with limited English proficiency (LEP), although certain exemptions apply. In the past LEP students across the nation often were excluded from large-scale assessments or tested inappropriately (Abedi, Lord & Hofstetter, 1998; Rivera & Vincent, 1996). When LEP students have been included in assessments, their scores may not have been reported, either aggregated with other scores, or disaggregated based on LEP statutes (August, Hakuta & Pompa, 1994).

Educators may have followed these testing practices in the belief that LEP students would benefit. However, the end result may be that the educational needs of LEP students are ignored because little is known about their academic progress. To date, there is only a limited amount of data on LEP students' participation and performance in these types of assessments (Olson & Goldstein, 1997; O'Malley & Valdez Pierce, 1994). There is even less longitudinal data tracking the participation and performance of LEP students in large-scale assessments over time although some initial data were reported by Liu and Thurlow (1999).

The Minnesota Assessment Project is a 4-year federally funded research project that examines the participation and performance of LEP students in the Basic Standards Tests (BSTs). One of the goals of the project is to provide longitudinal data on the test performance of LEP students, both those who receive English as a Second Language services and those who do not, in order to begin to understand the consequences of educational reform for these students.

Since the BSTs are high-stakes exams, students first participate in the 8th grade and continue participating through the 12th grade until the tests are passed. For the years discussed in this report, a minimum of 75% of the items in each test had to be answered correctly in order for students to pass. To increase our understanding of how LEP students perform over time on the BSTs, this report presents the performance of those students who failed in the first round of testing

for the school years 1996 through 1998. This study specifically addressed the following research question: For second-time test takers, is there a range of first-time scores that predicts passing the test on the second try?

Method

Data were accessed from databases maintained by the Minnesota Department of Children, Families and Learning (CFL). Student BST scores were selected from the CFL database whenever scores occurred for both 1997 and 1998. State student identification numbers were used to match 1997 and 1998 test scores for those years of BST testing selected for this study. Therefore, these analyses only include students in the database with valid identification numbers in both years. These students are a subset of the entire population of approximately 150,000 students in grades 8 through 12 who tested in 1998. They should be not be considered representative of the entire population. For example, students who took the BSTs for the first time in 1998 are not included in the data in this report. In addition, even though those students who failed the BSTs the first time are referred to as "second-time test takers" in this report, a few of these students may be taking the test for the third time. For instance, if a student initially failed as an 8th grader in 1996 and again as a 9th grader in 1997, the student would have taken the test for the third time in 1998. Such students are not distinguished from second-time test takers in this report.

The term "LEP" in this report is defined to mean those students who were identified in the CFL databases as receiving English as a Second Language (ESL) or Bilingual Education services.

Participation and Performance of Second-Time Test Takers

There were 19,534 students in grades 8 through 12 who took the BST Reading test in both 1997 and 1998 (Table 1); of these, 52% (n = 10,087) passed in 1998. On the other hand, for the 819 LEP students out of the 19,534 who were tested with the BST Reading test in 1997 and 1998, only 17% (n = 140) second-time test takers passed in 1998. While the numbers differ for the BST Mathematics

test, the pattern is similar to the BST Reading test; that is, a higher percentage of the set of all second-time test takers passed the test in 1998 than of the LEP second-time test takers (see Table 1).

Table 1. All Students and LEP Students in Grades 8-12 Who Participated in the Mathematics and Reading BSTs in Both 1997 and 1998

	Students Testing in 1997 and in 1998	Students Failing in 1997 and Passing in 1998	Percent Passing in 1998
Reading			
All Students	19,534	10,087	52%
LEP Students	819	140	17%
Mathematics			
All Students	14,566	5,076	35%
LEP Students	878	177	20%

There were 14,566 students who took the BST Mathematics test in both 1997 and 1998; of this number, 35% (n = 5,076) passed in 1998. Of the 878 LEP students out of the larger set of 14,566 students, 20% (n = 177) passed in 1998. When all students are considered together, 17% more passed the Reading test the second time than the Mathematics test, but when only the LEP students are considered, 3% more students passed the Mathematics test the second time than the Reading test.

In order to analyze the change in BST performance of second-time test takers, for each test we chose the population of "all students who failed in 1997" and divided these students into groups: 7 groups for the Reading test and 9 groups for the Mathematics test. Group divisions were made arbitrarily based on the distribution of scores. The first group of students for each test scored 1-25% of items correct; that is, these students achieved below or at the level usually designated as chance-level performance. The number of groups for the Mathematics test is larger than the number for the Reading test because a finer

distinction among scores was desired for the Mathematics test where more students scored near the minimum passing score of 75%. Table 2 shows the range of scores that falls within each of the 7 groups for reading and 9 groups for mathematics. For purposes of comparison, LEP students were categorized into these same groups based upon their test performance in 1997. In this report the performance of all students and LEP students is discussed in the context of these groups.

Table 2. Groups of Students Based on the Performance of All Students Who Failed in 1997

Group	Percent of Items Correct in Reading	Percent of Items Correct in Mathematics
1	1-25%	1-25%
2	26-35%	26-35%
3	36-45%	36-43%
4	46-55%	44-50%
5	56-63%	51-54%
6	64-68%	55-59%
7	69-74%	60-65%
8	N/A (passing)	66-69%
9	N/A (passing)	70-74%

The next series of tables, Tables 3 through 10, shows the performance of "all students tested in 1997 and 1998" (including LEP students), as well as the performance of only LEP students who initially failed the BSTs in 1997.

Table 3 displays the BST Reading performance for all students who failed the test in 1997 and passed in 1998; Table 4 displays the BST Reading performance for LEP students who failed the test in 1997 and passed in 1998. In each table, the score group for which approximately 50% of second-time test takers passed in 1998 is marked with a double asterisk (**). In the case of all students (Table 3), score group 5 is marked, indicating that more than one-half of all students (60.3%) who achieved 56-65% correct on the BST Reading test in 1997 the subsequent year. Students in groups 6 and 7 demonstrated even greater rates of passing in 1998. In contrast, LEP students needed to be in score group 6 to approach a 50% chance of passing. Slightly less than half (47.2%) of these LEP students who achieved 64-68% correct on the BST Reading test in 1997 passed the test the following year.

Table 3. All Students Failing Reading in 1997 and Passing in 1998 by Score Group

Score Group	Students Passing in 1998	Total Students in Group	% Pass Reading (1998)
1	23	454	5.1%
2	85	1,411	6.0%
3	477	2,516	19.0%
4	1,565	4,014	39.0%
**5	2,706	4,487	60.3%
6	2,851	3,806	74.9%
7	2,380	2,846	83.6%

** Indicates the score group for which approximately 50% of second-time test takers passed.

Table 4. LEP Students Failing Reading in 1997 and Passing in 1998 by Score Group

Score Group	Students Passing in 1998	Total Students in Group	% Pass Reading (1998)
1	4	111	3.6%
2	5	223	2.2%
3	26	204	12.7%
4	43	149	28.9%
5	36	84	42.9%
**6	17	36	47.2%
7	9	12	75.0%

** Indicates the score group for which approximately 50% of second-time test takers passed.

For both all students and LEP students, the percentage of students passing the Reading test in 1998 generally increased as the score group increased; however, for each score group, the percentage of LEP students passing in 1998 is lower than the percentage of all students passing in 1998. This difference is illustrated in Figure 1. Note that the difference is smallest (less than 7 percentage points) for the groups whose scores on the 1997 tests were the lowest (score groups 1 through 3); the difference is fairly small (8.6) between score group 7 for the sets of all students and LEP students, and the largest difference (27.7) is between score groups 6.

Tables 5 and 6 display the mean percent correct on the 1997 BST Reading test for each score group and the mean percent correct on the 1998 BST Reading test for the students who had been in a particular score group in 1997. For example,

the last row of Table 6 shows that LEP students in score group 7 had a mean of 72% on the 1997 BST Reading test. Those students achieved a mean of 77.8% on the 1998 BST Reading test. The mean number of percentage points gained from 1997 to 1998 (in this case, 5.8) is shown in the last column of each table and is illustrated in Figure 2. For the most part, the general population of students outperformed and made larger gains than the LEP students with similar 1997 test scores.

Figure 1. Percent Passing BST Reading Test in 1998 by Score Group for All Students and LEP Students

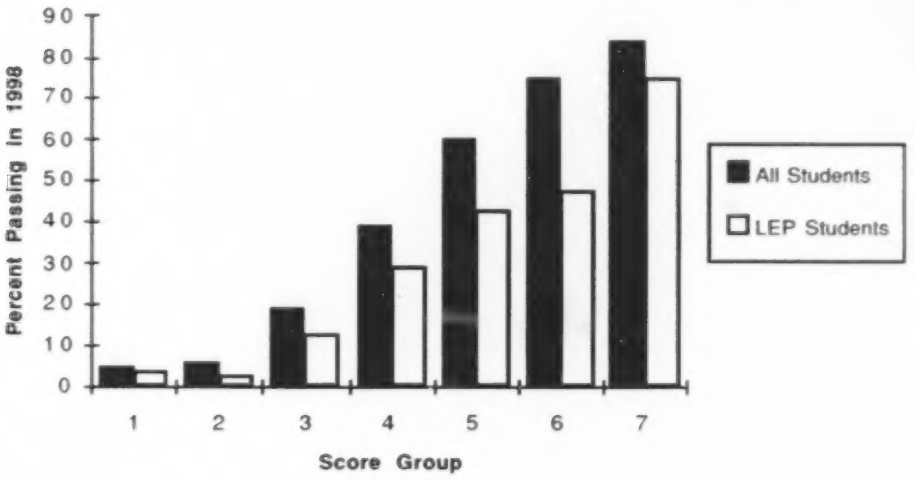


Table 5. Mean Percent Correct for All Students on BST Reading Test in 1997 and 1998

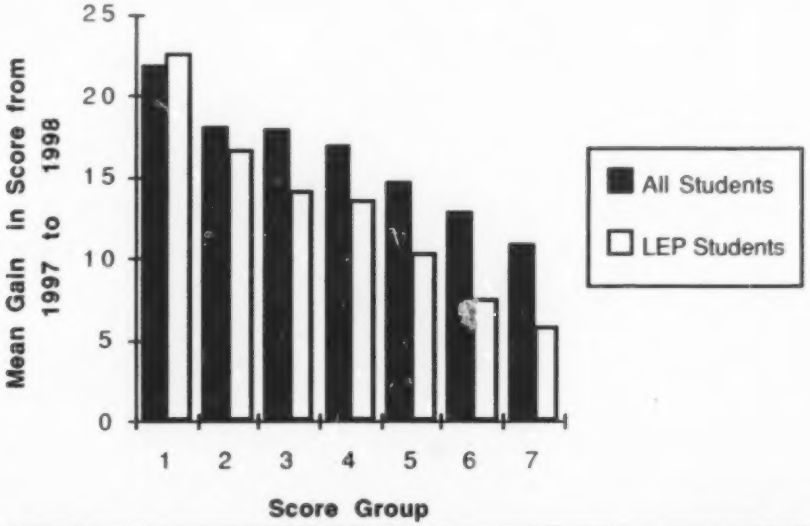
Score Group	Mean % Correct BST Reading 1997	Mean % Correct BST Reading 1998	Mean Gain 1997 to 1998
1	22.0	43.8	21.8
2	32.0	50.0	18.0
3	42.0	59.9	17.9
4	52.0	68.9	16.9
5	61.0	75.6	14.6
6	67.0	79.9	12.9
7	72.0	82.9	10.9

Table 6. Mean Percent Correct for LEP Students on BST Reading Test in 1997 and 1998

Score Group	Mean % Correct BST Reading 1997	Mean % Correct BST Reading 1998	Mean Gain 1997 to 1998
1	21.0	43.6	22.6
2	32.0	48.7	16.7
3	44.0	58.1	14.1
4	52.0	65.6	13.6
5	60.0	70.3	10.3
6	66.0	73.5	7.5
7	72.0	77.8	5.8

Score group 1 of the LEP students outgained score group 1 of all students slightly (22.6 versus 21.8 percentage points); however, this was not true for any other score groups. While the gain in percentage points from 1997 to 1998 declined for both all students and LEP students as the score group increased, for the LEP students the decline was more precipitous: from 22.6 for score group 1 to 5.8 percentage points for score group 7. In contrast, the gain for the set of all students declined by one-half from score group 1 (21.8) to score group 7 (10.9).

Figure 2. Mean Gain on BST Reading Test by Score Group for All Students and LEP Students



The BST Mathematics performance for all students who failed the test in 1997 and passed in 1998 is displayed in Table 7. Following that is Table 8, which displays the BST Mathematics performance for LEP students who failed the test in 1997 and passed in 1998. In each table, the score group for which approximately 50% of second-time test takers passed in 1998 is marked with a double asterisk (**). This is score group 8 in each table, indicating that of students who scored 66-69% correct on the BST Mathematics test in 1997, 55.0% of all students and 48.9% of LEP students passed in 1998.

Table 7. All Students Failing Mathematics in 1997 and Passing in 1998 by Score Group

Score Group	Students Passing in 1998	Total Students in Group	% Pass Math (1998)
1	4	101	4.0%
2	5	446	1.1%
3	13	940	1.4%
4	85	1566	5.4%
5	146	1450	10.1%
6	349	1757	19.9%
7	1119	3035	36.9%
**8	1563	2840	55.0%
9	1792	2431	73.7%

** Indicates the score group for which approximately 50% of second-time test takers passed.

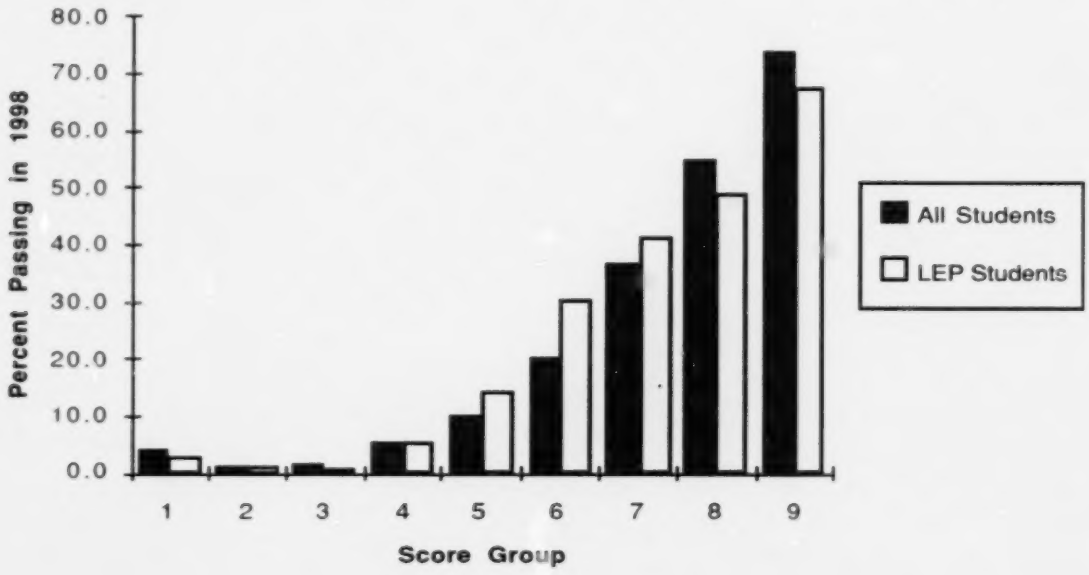
Table 8. LEP Students Failing Mathematics in 1997 and Passing in 1998 by Score Group

Score Group	Students Passing in 1998	Total Students in Group	% Pass Math (1998)
1	1	32	3.1%
2	1	82	1.2%
3	1	140	0.7%
4	9	162	5.6%
5	16	113	14.2%
6	29	95	30.5%
7	53	129	41.1%
**8	46	94	48.9%
9	21	31	67.7%

** Indicates the score group for which approximately 50% of second-time test takers passed.

For both all students and LEP students, the percentage of students passing the Mathematics test in 1998 showed similar patterns. The percentage of students passing the test in 1998 was lower for score groups 2 and 3 than for score group 1, and for score group 4 through 9 the percentage passing increased as the score group increased. This pattern is illustrated in Figure 3, which compares the percentage of all second-time test takers and LEP second-time test takers passing the Mathematics test in 1998. In contrast to the Reading test, for some score groups (5, 6, and 7) a higher percentage of LEP students than all students passed the BST Mathematics test in 1998.

Figure 3. Percent Passing BST Mathematics Test in 1998 by Score Group for All Students and LEP Students



The mean percent correct on the 1997 BST Mathematics test for each score group and the mean percent correct on the 1998 BST Mathematics test for the students who had been in a particular score group in 1997 is displayed in the second part of Tables 9 and 10.

The mean number of percentage points gained from 1997 to 1998 is shown in the last column of each table, and an illustration of the difference between the sets of all second-time test takers and LEP second-time test takers is given in

Table 9. Mean Percent Correct for All Students on BST Mathematics Test in 1997 and 1998

Score Group	Mean % Correct BST Math 1997	Mean % Correct BST Math 1998	Mean Gain 1997 to 1998
1	21.0	32.3	11.3
2	32.0	35.4	3.4
3	40.0	43.0	3.0
4	47.0	52.5	5.5
5	53.0	59.2	6.2
6	57.0	63.9	6.9
7	63.0	70.1	7.1
8	68.0	74.4	6.4
9	72.0	78.9	6.9

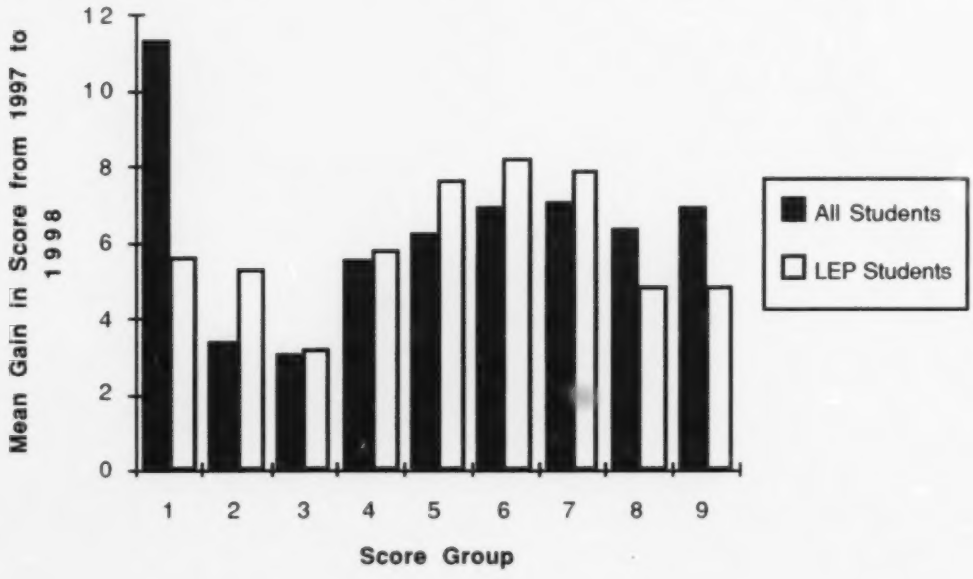
Table 10. Mean Percent Correct for LEP Students on BST Mathematics Test in 1997 and 1998

Score Group	Mean % Correct BST Math 1997	Mean % Correct BST Math 1998	Mean Gain 1997 to 1998
1	22.0	27.6	5.6
2	32.0	37.3	5.3
3	40.0	43.2	3.2
4	47.0	52.8	5.8
5	53.0	60.6	7.6
6	57.0	65.2	8.2
7	63.0	70.9	7.9
8	68.0	72.8	4.8
9	72.0	76.8	4.8

Figure 4. The mean gain for all second-time test takers ranged from 11.3 percentage points (score group 1) to 3.0 percentage points (score group 3). For the LEP second-time test takers, the mean gain ranged from 8.2 percentage points (score group 6) to 3.2 percentage points (score group 3). A comparison of Figures 2 and 4 shows that the pattern of mean gain by score groups is different for Reading and Mathematics. The BST Reading test has a wider range of gains both for all students (21.8 to 10.9) and for LEP students (22.6 to 5.8) than the Mathematics test has for all students (11.3 to 3.0) and for LEP students (8.2 to 3.2). In addition, neither the mean gain of all students nor that of LEP students

on the Mathematics test decreases by score group as it does on the Reading test. For all students on the Mathematics test, the mean gain is the highest (11.3 percentage points) for score group 1, drops steeply for score groups 2 and 3 (3.4 and 3.0, respectively), and then increases again and levels off for score groups 6 through 9 (a range of 6.4-7.1). For the LEP students on the Mathematics test, the mean gain is 5.6 percentage points for score group 1, dips to a minimum of 3.2 for score group 3, increases to a maximum of 8.2 for score group 6, and finally decreases again for score groups 8 and 9 (4.8).

Figure 4. Mean Gain on BST Mathematics Test by Score Group for All Students and LEP Students



Discussion

In summary there are several overarching trends that emerge from these analyses that support a better understanding of the participation and performance of LEP students in Basic Standards Testing. First, however, it should be noted that these analyses are based on only two years of testing data. While early interpretations can be drawn, these data are not enough to determine trends in the performance of all LEP students. This is true in part because the test was optional in 1996 and

1997. Additional years of data will provide a more accurate determination of trends in LEP student performance.

With this caution in mind, the following points can be made:

- Between 1997 and 1998, 20% or fewer of LEP students who retook the BSTs passed. This percentage of successful second-time test takers compares to 35% of all students passing the Mathematics test and 52% of all students passing the Reading test on the second attempt.

- LEP students who scored below 64-68% of items correct on the Reading test and below 66-69% of items correct on the Mathematics test in 1997 had less than a 50% chance of passing the test in 1998.

- There was a small number of students whose test scores were in score group 1 (i.e., 25% correct or less) on the Reading or Mathematics test in 1997 and who passed in 1998. This suggests a need to look in greater depth at who these students are and what instructional supports they received for their achievement.

The effect of remedial programming is one of the important factors in second time test achievement, but it was beyond the scope of the current study. Minnesota schools are required by law to provide remediation for students who do not pass the Basic Standards Tests; however, the type of remediation is not specified. Programs range from pull-out sessions with individual tutoring to summer school programs with a computerized curriculum. Various types of remedial programs offered in Minnesota are discussed in Schleisman, Peterson, and Davison (2000). Students in some districts can take the BST again immediately after summer school instead of waiting several months until the next large-scale test administration. The type of remediation a student received and its proximity to the test administration may play significant roles in whether a student passes the BST on the second attempt, regardless of the group in which the student's score fell the first time. For English language learners taking the BST Mathematics test, Teelucksingh (2000) has shown a positive effect of using the Accelerated Math Program, a computerized program for tracking student progress toward meeting particular mathematics objectives. Additional studies are needed to document the types of remedial programming provided for LEP students and

the effects of remediation on students' test scores. After promising remedial practices are identified, additional resources will be needed to make those practices available in other schools.

Individual student characteristics may also be an important factor in second time test achievement. Further analyses are needed to examine individual student results to determine the characteristics of LEP students who make a greater than average amount of gain on the BSTs from one test administration to another. In a study of four schools with high LEP student populations, Liu, Albus, Thurlow, Bielinski, and Spicuzza (2000) found that student characteristics, such as length of time in the United States and in U. S. schools, levels of native language or English proficiency, and the number of school changes a student has experienced play a direct role in test achievement. This type of information, combined with information on the type of remediation students are receiving, can provide valuable insight for educators on ways to help LEP students succeed on large-scale, high-stakes assessments.

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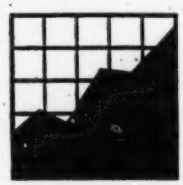

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